



## REMARKS/ARGUMENTS

The Office Action mailed May 17, 2005 has been carefully considered.

Reconsideration in view of the following remarks is respectfully requested.

### Claim Status

Claims 1-13 are now pending. No claims stand allowed.

The claims remain unchanged, but the listing of the claims is presented for the Examiner's convenience.

### The 35 U.S.C. §103 Rejection

Claims 1-4, 7-9, 11-13 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Jeromin (U.S. Pat. No. 5,381,014) in view of Patch (U.S. Pat. No. 6,126,901), among which claims 1-2 and 11 are independent claims.

This rejection is respectfully traversed.

According to M.P.E.P. §2143,

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.

Furthermore, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Claim 1 defines an X-radiation imagery device comprising at least one detection matrix made of a semiconducting material. The detection matrix comprises (a) pixels to convert incident X-photons into electric charges, (b) an electric charges reading panel including a plurality of electronic devices, each electronic device being integrated by pixel, the electric charges reading panel being a monocrystalline silicon panel, and (c) a detection layer made of a continuous layer of semiconducting material deposited in vapour phase on the electric charges reading panel, as recited in Claim 1.

In the Office Action, the Examiner alleges that the elements of the presently claimed invention are disclosed in Jeromin except that Jeromin does not teach that the electric charges reading panel is made of monocrystalline silicon. The Examiner further alleges that Patch discloses a conventional single crystalline silicon substrate or electric charges reading panel (citing column 8, lines 57-60 thereof), and that it would be obvious to one having ordinary skill in the art at the time of the invention to use the substrate or electric charges reading panel as disclosed by Patch with the invention as disclosed by Jeromin in order to increase detection efficiency. The Applicants respectfully disagree for the reasons set forth below.

Jeromin allegedly teaches a continuous detection layer **14** (FIG. 1 thereof) made of amorphous selenium, which is a semiconductor material and deposited in vapor phase (column 4, line 24 thereof). However, Jeromin's alleged reading panel is a dielectric substrate (panel) **15**, and Jeromin fails to teach or suggest using a monocrystalline silicon panel, as the Examiner has correctly mentioned in the Office Action.

Patch is related to an apparatus and method for detecting low levels of radionuclides in a fluid sample using a semiconductor substrate. The substrate includes a sorbent material (such as ion-exchange resin) to collect the radionuclides. A collecting chamber exposes the substrate to a measured amount of the fluid sample such that radionuclides in the fluid sample are collected by the sorbent material. A drying apparatus then dries the substrate, and a measuring apparatus measures emissions from radionuclides collected on the substrate. (See the abstract of Patch).

Patch describes as follows:

.... a portable detector **10** ... is used to detect for the presence of radionuclides in a fluid sample. The detector **10** includes a cup portion **12** ... , and a base portion **14** for housing a semiconductor substrate **15** (e.g., a silicon detector) used to detect the radionuclides. The semiconductor substrate **15** is typically thin (e.g., about 500 microns in thickness) and is often mounted on a secondary substrate **16** (e.g., aluminum) for support.

...  
... a surface **18** of the semiconductor substrate **15** in direct contact with the sample **11** has been chemically treated to facilitate deposition of the radionuclide(s). ... Direct contact between the emitting material and the semiconductor surface **18** increases the amount of radionuclide emission absorbed by the semiconductor detector.

(Column 6, lines 1-34 of Patch)

Accordingly, although Patch's semiconductor substrate **15** may be made from single-crystalline silicon (column 8, lines 57-59 thereof), the semiconductor substrate **15**

is a very thin (about 500 micron) layer used as a detector which is to be in direct contact with the sample liquid. More specifically, emissions from the sample **38** is absorbed by the silicon substrate **15** and generates charge carriers (electron-hole pairs) drift therethrough (column 8, lines 11-25, FIG. 4D of Patch). In Patch, the secondary substrate **16** (see FIGS. 4A through 4D thereof) made of aluminium corresponds to the alleged panel substrate. Thus, Patch merely teaches using a detection layer (thin substrate) made from single-crystalline silicon, not a monocrystalline silicon charges reading panel on which such a detection layer is formed.

Therefore, Patch fails to teach using an electric charges reading panel made of monocrystalline silicon, as recited in Claim 1.

Accordingly, even if Patch should be combined with Jeromin, the alleged combination would modify Jeromin's radiation detection layer **14** into a single-crystalline thin layer. However, since Jeromin's system has the pixels **19** formed on the dielectric substrate **15** using a Thin Film Technology (see FIG. 2 of Jeromin), such a single-crystalline detection layer would not be formed on such a structure. It should also be noted that Patch only detects the amount of radionuclides contained in the liquid sample, and thus Patch's system cannot be used for any imaging or for imager devices which requires detecting the position of the radiation. Those of ordinary skill in the art would not combine Patch with Jeromin due to such structural and functional differences between the two systems.

Accordingly, Jeromin, whether considered alone or combined with or modified by Patch, does not teach or suggest the electric charges reading panel including a plurality of electronic devices, each electronic device being integrated by pixel, the electric charges reading panel being a monocrystalline silicon panel, on which a detection layer made of a continuous layer of semiconducting material is deposited in vapour phase, as recited in Claim 1. Claims 2 and 11 also includes substantially the same distinctive feature as claim 1.

Accordingly, it is respectfully requested that the rejection of claims based on Jeromin and Patch be withdrawn. In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

#### Dependent Claims

Claims 3-6 depend from claim 2, and claims 7-8 depend from claim 1, and thus include the limitations of claims 2 and 1, respectively. The argument set forth above is equally applicable here. The base claims being allowable, the dependent claims must also be allowable at least for the same reasons.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

Request for Interview

Applicants respectfully request an interview to expedite the prosecution of this application. Submitted herewith is an Applicant Initiated Interview Request Form. The Examiner is invited to call the undersigned attorney at the number indicated below to schedule a telephonic interview to discuss the matter.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-1698.

Respectfully submitted,  
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